Background: Many patients with rheumatoid arthritis (RA) and spondyloarthritides (SpA) are in their childbearing years. Concerns exist regarding the interplay between the rheumatic diseases and the pregnancy (1). Objectives: Actually, there are contradictory data regarding the pregnancy outcome in patients with RA and SpA (2). Thus, we performed this longitudinal retrospective study (3) to assess the effects of RA and SpA on pregnancy outcomes.

Methods: The data of 78 pregnancies of 60 women followed from April 2017 to December 2020 at pregnancy clinic of Internal Medicine Unit, San Bortolo Hospital, Vicenza and Rheumatology Unit, University of Verona were reviewed. Fifty (64.1%) women were affected by RA and 28 (35.9%) by SpA. Information regarding demographic data, disease activity, drug exposure and maternal/fetal outcomes were collected in an electronic database. Details concerning pregnancy complications and congenital malformation were also collected. We compared pregnancy and fetal/neonatal outcome, medication use and disease activity between women affected by RA and SpA. Moreover, we evaluated the effect of disease activity on pregnancy outcome.

Results: Overall, there were 70 (86.4%) live births, 10 (12.3%) miscarriages and 1 (1.2%) fetal death. There were three twin pregnancies. Even there was a higher rate of glucocorticoids and bDMARDs use in RA than in SpA group, respectively 40% vs 21% and 70% vs 51%, there were no statistical differences regarding drug exposure at conception. Moreover, there were no differences concerning disease activity at conception. Still, a higher rate of glucocorticoids and bDMARDs, respectively 26% vs 10.7% and 46% vs 39.3% were used in RA than in SpA patients during pregnancy. Furthermore, we did not find any statistical differences regarding maternal and foetal/neonatal outcome between pregnancies in the RA and those in the SpA groups. There were four (4.9%), congenital malformation, two (3.8%) in RA group and two (6.9%) in SpA group. About one-third of patients 24 (30.7%) presented a moderate disease activity at conception as evaluated by DAS28PCR and BASDAI. However, there were no significant differences, on maternal and foetal/neonatal outcome in patients with moderate activity disease with respect of those in clinical remission.

Conclusion: Even a higher rate of glucocorticoids and bDMARDs were used in RA than in SpA patients, there were no differences on pregnancy outcome between them.

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AB0145 SMARTPHONE- AND SMARTWATCH-ACQUIRED DAILY STEP COUNT, ACTIVITY, AND BAROMETRIC PRESSURE OF PATIENTS WITH RHEUMATOID ARTHRITIS: A PROSPECTIVE STUDY FOR RA DIGITAL PHENOTYPING

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Background: Symptoms in patients with rheumatoid arthritis (RA) are potentially influenced by exercise load and meteorological change, and often vary from day to day, especially in unstable condition of RA. Patients with RA not infrequently experience worsening of joint symptoms when the load on the joint, such as walking and doing housework, exceeds a moderate range. However, the worsening of joint symptoms is often not observed in the midst of the loading of the joint, but often comes apparent after a few hours or days.

Objectives: To elucidate the relationship between smartphone- and smartwatch-acquired daily objective data (barometric pressures, steps, and activity) and daily subjective patient reported outcomes of RA.

Methods: A smartphone (iPhone 8) and a wristband-type smartwatch (Fitbit Versa 2) were lent to each patient for free. A mobile app was developed and installed into the smartphones to collect patients’ daily subjective RA symptoms including Pt-P-VAS (patient-pain visual analogue scale), Pt-G-VAS (pt-generic VAS), PtTJCount(68)(patient self-determined tender joint count among 68 joints), PtSJCount(66)(patient self-determined swollen joint count among 66 joints), PtTJCount(28). Also, the smartwatch data and physicians’ assessment were collected from the same subject. Physicians’ and patients’ assessment of TJC, SJC, and DAS28 were performed independently. We conducted a simple linear regression analysis with outcome variables of Pt-P-VAS, Pt-G-VAS, PtTJCount(68), PtTJCount(28), PtSJCount(66), PtTJCount(28), PtSJCount(66), and PtSJCount(28).

The independent variables included smartphone-acquired daily steps and barometric pressure of the reported day and the previous day, and smartwatch-acquired minutes of “lighty active (1-3 METs equivalent)”, “fairly active (3-6 METs equivalent)” and “very active (6 METs equivalent)” of the reported day and previous day. We defined low barometric pressure as less than 1000 hPa. The level of activity was measured by the smartwatch. Patients were blinded to daily barometric pressure data and their daily active time when the patients answered daily symptom questions on the smartphones.